

WHAT IS CLAIMED IS:

1. A fuel cell, comprising a tubular polymer electrolyte membrane, with a fuel electrode on one of
5 inner and outer sides of the membrane, and with an air electrode on the other side of the membrane.

2. The fuel cell according to claim 1, wherein said fuel electrode and said air electrode each are composed of
10 a carbon particle material on the surface of which catalyst fine-particulates are dispersed and loaded.

3. The fuel cell according to claim 1, wherein said tubular polymer electrolyte membrane has a catalyst layer
15 deposited or coated on a surface thereof.

4. The fuel cell according to claim 1, wherein fuel is brought into contact with said fuel electrode on the surface of said tubular polymer electrolyte membrane, and
20 an oxidizer is brought into contact with said air electrode on the surface of said tubular polymer electrolyte membrane.

5. The fuel cell according to claim 1, wherein said
25 fuel cell is utilized as a power source of a portable

device.

6. The fuel cell according to claim 1, wherein the
fuel electrode is provided on the inner side of the
5 membrane, and the air electrode is provided on the outer
side of the membrane.

7. The fuel cell according to claim 1, wherein the
fuel electrode is provided on the outer side of the
10 membrane, and the air electrode is provided on the inner
side of the membrane.

8. The fuel cell according to claim 1, which is a
small fuel cell.
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9. The fuel cell according to claim 1, wherein the
tubular polymer electrolyte membrane has an inner diameter
of 0.2 to 10 mm, an outer diameter of 0.5 to 12 mm, and a
length of 20 to 1,000 mm.